

Amendments to the Claims:

This listing of claims will replace all prior versions and listing, of claims in the application:

Listing of Claims:

1 (currently amended): A resin roller comprising a core body, a cylindrical resin-formed body and at least two sealing members,

wherein said resin roller which is produced by placing two sealing members around said core body in spaced apart positions which are also spaced from the edges of said core body, disposing a said core body in a forming metal mold having a cylindrical metal mold and core supporting members furnished at both edge parts of the cylindrical metal mold, wherein as well as causing the core supporting members to hold said both edge parts of said core body, and pouring a forming resin into the metal mold, and solidifying it, said forming resin to form said cylindrical resin-formed body, wherein said sealing members are in the resin forming space of said forming metal mold and contact edge faces of said core supporting members at the edge of said core supporting members in contact with said core body to prevent leakage of resin through said core supporting members,

wherein said characterized in that the resin roller has the core body either has of the same outer diameter over the entire a full length or has groves for attaching E-rings or O-rings and, with the exception of cross sections including said groves, has the same outer diameter over the entire length,

wherein, after the resin roller is removed from the forming metal mold, said ~~and a~~
~~cylindrical resin-formed body~~, sealing members are disposed between said ~~furnished around~~
the core body and said cylindrical resin-formed body in the vicinity of both edge parts of the
resin-formed body, ~~and~~

~~the core body is disposed such that the sealing members contact edge faces at sides~~
~~of a roller forming space.~~

2 (currently amended): The resin roller as set forth in claim 1, further comprising
E-rings, characterized in that grooves are defined for attaching E-rings and the E-rings are
attached in the grooves, and when the core body is disposed in the metal mold, the sealing
members are provided to the core body such that the sealing members respectively contact
the E-rings and the edge faces of the core supporting members.

3 (currently amended): The resin roller as set forth in claim 1, characterized in that
two the cylindrical member is members are attached to the core body and when the core
body is disposed in the metal mold, the sealing members are provided to the core body such
that the sealing members respectively contact the cylindrical ~~metal mold~~ members and the
core supporting members.

4 (canceled).

5 (currently amended): The resin roller as set forth in claim 1, wherein said sealing members are O-ring sealing members, wherein ~~characterized in that~~ the core body is defined with grooves for attaching the O-ring sealing members, and when the core body is disposed within the metal mold, the sealing members are disposed such that the sealing members contact the edge faces of the core supporting members while being retained in the grooves.

6 (canceled).

7 (currently amended): A method of producing ~~the~~ a resin roller, comprising the step of disposing ~~the~~ core supporting members at both edge parts of ~~the~~ a cylindrical metal mold to hold a ~~and holding the~~ core body with both core supporting members, and

~~the step~~ steps of pouring ~~the~~ a forming resin into ~~the~~ a roller forming space formed between the cylindrical metal mold and the core supporting members and solidifying the forming resin to form a resin-formed body around the core body,

characterized by disposing ~~the~~ sealing members around the core body in the vicinity of the edge parts of the resin-formed body to be formed, elastically contacting the sealing members to the sides ~~of the roller forming space~~ of the core supporting members in the roller forming space, and, under this condition, pouring the forming resin into the roller forming space.

8 (currently amended): A resin roller comprising, ~~characterized in that the resin roller is formed in the roller main body by providing~~ a cylindrical resin layer around ~~the~~ a core body, ~~and the roller main body is chamfered or rounded at~~ wherein corners of edge

parts of the resin ~~layers~~ layer are chamfered or rounded by removing resin via thermal decomposition, and ~~the resin~~ a surface layer is formed on the surface ~~with a surface~~ of the resin layer.

9 (original): The resin roller as set forth in claim 8, wherein the hardness of the resin layer is 25° or lower (JIS-A).

10 (canceled).

11 (currently amended): A method of producing a resin roller, comprising the ~~step~~ steps of disposing ~~the~~ a core body in ~~the~~ a forming metal mold, pouring ~~the~~ a thermosetting liquid resin into the metal mold for hot-setting, and forming ~~the~~ a roller main body furnished with a cylindrical resin layer around the core body,

~~the step of~~ releasing the roller main body from the metal mold, wherein thermal shrinkage of the resin layer causes the resin layer to form edge parts with a swollen appearance, followed by chamfering or rounding the corners of the edge parts of the resin ~~layers~~ layer, and

~~the step of~~ forming ~~the~~ a surface layer around the resin ~~layers~~ layer.

12 (original): The method of producing the resin roller as set forth in claim 11, wherein the step of chamfering or rounding the corners of the edge parts of the resin layers comprises a step of heating the corners to fuse and remove the resin at the corners.

13 (original): The method of producing the resin roller as set forth in claim 11, wherein the step of chamfering or rounding the corners of the edge parts of the resin layers comprises a step of coating a solvent to the corners for dissolving and removing the resin at the corners.

14 (original): The method of producing the resin roller as set forth in any of claims 11 to 13, wherein the hardness of the resin layer is 25° or lower (JIS-A).

15 (currently amended): The method of producing the resin roller as set forth in any of claims 11 to 13, wherein ~~when~~ the swelling amount of the edge part ~~in comparison with that of the center part of the formed roller body is 1~~, the swelling is defined as the difference between the thickness of the resin layer in the edge part and the thickness of the resin layer in the center part, and wherein the amount of the edge part ~~for removed by~~ chamfering or rounding is 1 to 40 times of said swelling amount in the diameter direction and 1 to 40 times of said swelling amount in the axial direction.

16 (currently amended): The method of producing the resin roller as set forth in any of claims 11 to 13, wherein the thermosetting liquid resin contains, as main components,

(A) polymer containing at least one alkenyl group ~~in molecule~~ per polymer chain and a main chain composed of repeating unit units ~~composing a main chain~~ being mainly oxy alkylene ~~unit units~~ or saturated hydrocarbon ~~unit units~~,

(B) a hardening agent containing at least two hydrosilyl ~~group in~~ groups per molecule,

(C) catalyst made of hydrosilyl, and

(D) conductivity giving agent.

17 (original): A roller producing apparatus using a thermosetting liquid resin, producing a roller which is composed of a core body and a resin-made elastic layer covering around the core body by use of a metal mold having a structure disposed with core supporting members holding a roller forming space therebetween at both ends of a cylindrical metal mold inserted inside with the core body,

characterized in that the core supporting member is provided with a mold-inner pressure adjusting mechanism.

18 (original): The roller producing apparatus using a thermosetting liquid resin as set forth in claim 17, wherein the mold-inner pressure adjusting mechanism provided in the core supporting member is equipped with a volume-variable spare room communicating with the roller forming space.

19 (currently amended): The roller producing apparatus as set forth in claim ~~17 or~~ 18, wherein when an inner diameter of the cylindrical metal mold is D , an outer diameter of the roller is d , and an outer diameter is d_s , the inner diameter D of the cylindrical metal mold, the outer diameter d of the roller, and the outer diameter d_s are prescribed such that a value of cross sectional shrinkage factor α defined with $(D^2-d^2)/(D^2-d_s^2)$ is 0.02 to 0.06, and the thickness of the elastic layer expressed with $(d-d_s)/2$ is 1 mm or more.

20 (canceled).

21 (currently amended): A method for producing a roller for an electrophoto[-]graphic apparatus composed of a main body formed with a hardening type liquid resin and support rods for supporting both edges of the main body, characterized by preparing a roller forming metal mold provided with a space for forming a roller main body as well as provided with a resin injecting inlet for filling the roller forming space with a hardening type liquid resin, ~~in the roller forming space~~, storing separately a hardening type liquid resin containing a cross linking agent and a hardening type liquid resin containing a catalyst, respectively measuring ~~to be~~ set amounts thereof, ~~and as~~ mixing both hardening liquid resins, and injecting a the mixture of the liquid resins into the forming space from ~~the~~ a resin pouring inlet so as to effect a hardening reaction for forming the roller main body.

22 (original): The method for producing rollers with the hardening type liquid resin as set forth in claim 21, wherein temperature of the hardening type liquid resin at injecting is adjusted to be within a range of 20 to 70°C.

23 (original): The method for producing rollers with the hardening type liquid resin as set forth in claim 21 or 22, wherein viscosity of the hardening type liquid resin at injecting is adjusted to be 5000 poise.

24 (currently amended): The method for producing rollers with a hardening type liquid resin as set forth in claim 21 or 22, wherein the hardening type liquid resin containing

the cross linking agent and the other hardening type liquid resin containing the catalyst are respectively ~~added~~ combined with the same amount of conductivity giving agent ~~of the same amount~~.

25 (currently amended): The method for producing rollers with the hardening type liquid resin as set forth in claim 21 or 22, wherein the composition of the hardening type liquid resin has a polymer containing at least one alkenyl group in molecule per polymer chain and a main chain composed of repeating units ~~unit composing a main chain~~ being mainly oxy alkylene ~~unit~~ units or saturated hydrocarbon ~~unit~~ units, and the cross linking agent has at least two hydrosilyl ~~group in~~ groups per molecule.

26 (currently amended): An apparatus ~~of~~ for producing a roller for an electro-photographic apparatus composed of a main body formed with a hardening type liquid resin and support rods for supporting both edges of the main body, characterized by providing a roller forming metal mold provided with a space for forming a roller main body as well as provided with a resin injecting inlet for filling the hardening type liquid resin in the roller forming space, containers for storing separately a hardening type liquid resin containing a cross linking agent and another hardening type liquid resin containing a catalyst, an injecting device furnished with measuring mechanisms for respectively measuring both resins to be set amounts thereof, and a mixing mechanism for mixing both measured liquid resins; ~~injecting, as mixing both resins, a mixture into the forming space from the resin pouring inlet so as to effect a hardening reaction for forming the roller main body.~~

27 (currently amended): The apparatus ~~of~~ for producing a roller with the hardening type liquid resin as set forth in claim 26, wherein a temperature adjusting instrument is provided for adjusting temperature of the hardening type liquid resin at injecting to be within a range of 20 to 70°C.

28 (currently amended): The apparatus ~~of~~ for producing a roller with the hardening type liquid resin as set forth in claim 26 or 27, wherein the hardening type liquid resin containing the cross linking agent and the other hardening type liquid resin containing the catalyst are respectively ~~added~~ combined with the same amount of conductivity giving agent ~~of the same amount~~.

29 (currently amended): The apparatus ~~of~~ for producing a roller with the hardening type liquid resin as set forth in claim 26 or 27, wherein the composition of the hardening type liquid resin has a polymer containing at least one alkenyl group in ~~molecule per~~ polymer chain and a main chain composed of repeating units ~~unit composing a main chain~~ being mainly oxy alkylene ~~unit~~ units or saturated hydrocarbon ~~unit~~ units, and the cross linking agent has at least two hydrosilyl ~~group in~~ groups per molecule.

30 (currently amended): An apparatus ~~of~~ for injection-forming a roller characterized by having a cylindrical metal mold inserted inside with ~~the~~ a core body and core supporting members detachably fitted to both edge parts of the core body in the axial direction of the cylindrical metal mold, ~~as~~ holding both edges of the inside inserted core body, ~~and is composed by disposing~~ wherein heating mechanisms are disposed for hot-setting ~~the~~ a resin

material introduced in a roller forming space around the injection forming metal mold having the roller forming space, said core supporting ~~member~~ members having a 1st obliquity tilting at a fixed angle with respect to an axial and vertical directions in the outer wall face, and said heating ~~mechanism~~ mechanisms having an inner wall face contacting to hold the injection forming metal mold when ~~under a condition of closing~~ the heating mechanism is closed and having a 2nd obliquity pressing the 1st obliquity to the inner wall face, whereby the injection forming metal mold is tightened and held.

31 (currently amended): The apparatus ~~of~~ for injection-forming a roller as set forth in claim 30, wherein the core supporting member has the 1st obliquity at the outer periphery, and the heating mechanism has pawl members with the 2nd obliquity pressing the 1st obliquity to the inner wall face ~~under the condition of closing~~ when the heating mechanism is closed.

32 (currently amended): The apparatus ~~of~~ for injection-forming a roller as set forth in claim 30, wherein a brim part having the 1st obliquity is expanded at an outer periphery of the fitting position of the core supporting member and the cylindrical metal mold, and the brim part is engaged with the inner wall face of the heating mechanism when ~~under the condition of closing~~ the heating mechanism is closed, ~~while the groove with wherein~~ the 2nd obliquity pressing the 1st obliquity ~~is formed in~~ forms concave ~~shape~~ shaped groove.

33 (currently amended): The apparatus ~~of~~ for injection-forming a roller as set forth in any of claims 30 to 32, wherein a heat resistant elastic member is interposed between the 1st obliquity and 2nd obliquity.

34 (currently amended): The apparatus ~~of~~ for injection-forming a roller as set forth in any of claims 30 to 32, wherein the tilt angle of the 1st obliquity is set in a range of 5 to 30°.

35 – 39 (canceled).

40 (currently amended): A resin roller forming metal mold which holds ~~the~~ a cylindrical metal mold and ~~the~~ a core body furnished at both edge parts of the cylindrical metal mold, which is ~~and~~ inserted inside of the cylindrical metal mold,

characterized in that a ring shaped concave groove is formed at an opening edge of a core holding hole provided in the core supporting member, said groove being larger in diameter than an outer diameter of the core body to be inserted in said core holding hole.

41 (currently amended): The resin roller forming metal mold as set forth in claim 40, characterized in that the ring shaped concave groove ~~reduces the~~ has a reduced diameter as ~~advancing an~~ toward the inner part of the core holding hole.